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| 09/980,236   | 11/29/2001  | David Lee Sandbach   | 9637-000036                   | 8166             |
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| HARNESS, DICKEY & PIERCE, P.L.C.<br>P.O. BOX 828<br>BLOOMFIELD HILLS, MI 48303 |             |                      | EXAMINER<br>DEWITTE, CONRAD J |                  |
|  |             |                      | ART UNIT<br>2673              | PAPER NUMBER     |
|  |             |                      | DATE MAILED: 11/05/2003       |                  |

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/980,236

Applicant(s)

SANDBACH ET AL.

Examiner

Conrad J. DeWitte

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 29 November 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-24 is/are rejected.
- 7) ☒ Claim(s) 1-23 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on November 29, 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 3.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

## **DETAILED ACTION**

### ***Specification***

1. The following guidelines illustrate the preferred layout for the specification of a utility application. These guidelines are suggested for the applicant's use.

### **Arrangement of the Specification**

As provided in 37 CFR 1.77(b), the specification of a utility application should include the following sections in order. Each of the lettered items should appear in upper case, without underlining or bold type, as a section heading. If no text follows the section heading, the phrase "Not Applicable" should follow the section heading:

- (a) TITLE OF THE INVENTION.
- (b) CROSS-REFERENCE TO RELATED APPLICATIONS.
- (c) STATEMENT REGARDING FEDERALLY SPONSORED RESEARCH OR DEVELOPMENT.
- (d) INCORPORATION-BY-REFERENCE OF MATERIAL SUBMITTED ON A COMPACT DISC (See 37 CFR 1.52(e)(5) and MPEP 608.05. Computer program listings (37 CFR 1.96(c)), "Sequence Listings" (37 CFR 1.821(c)), and tables having more than 50 pages of text are permitted to be submitted on compact discs.) or  
REFERENCE TO A "MICROFICHE APPENDIX" (See MPEP § 608.05(a). "Microfiche Appendices" were accepted by the Office until March 1, 2001.)
- (e) BACKGROUND OF THE INVENTION.
  - (1) Field of the Invention.
  - (2) Description of Related Art including information disclosed under 37 CFR 1.97 and 1.98.
- (f) BRIEF SUMMARY OF THE INVENTION.
- (g) BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE DRAWING(S).
- (h) DETAILED DESCRIPTION OF THE INVENTION.
- (i) CLAIM OR CLAIMS (commencing on a separate sheet).
- (j) ABSTRACT OF THE DISCLOSURE (commencing on a separate sheet).
- (k) SEQUENCE LISTING (See MPEP § 2424 and 37 CFR 1.821-1.825. A "Sequence Listing" is required on paper if the application discloses a nucleotide or amino acid sequence as defined in 37 CFR 1.821(a) and if the required "Sequence Listing" is not submitted as an electronic document on compact disc).

The Examiner requests that Applicants amend the specification so as to include, as appropriate, the section headings listed above.

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2. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

The following title is suggested: Manual Input Apparatus for a Handheld Device.

***Claim Objections***

3. Claim 4 is objected to because of the following informality: Applicants used "said electronic processor device" not "said electronic processing device" at line 2 of the claim.
4. Claim 6 is objected to because of the following informalities: Claim 6 depends on the following claim, claim 7. Dependent claims should follow the claims upon which they depend. It appears that claim 6 should depend on claim 5. However, for the purpose of identifying and applying prior art, the claim will be treated as filed.
5. Claim 8 is objected to because of the following informality: Applicants used "received on a surface said apparatus" not "received on a surface of said apparatus" at line 9 of the claim.
6. Claim 10 is objected to because of the following informality: Applicants used "said second and third axis" not "said second axis and said third axis".
7. Claim 12 is objected to because of the following informality: Applicants used "said electronic processor" not "said electronic processing device" in lines 4-5 and 6 of the claim.
8. Claim 13 is objected to because of the following informality: Applicants used "said first and second lateral portion" not "said first lateral portion and said second lateral portion" or "said first and second lateral portions" in lines 2-3 of the claim.
9. Claim 14 is objected to because the use of the trademark VELCRO has been noted in this application. It should be capitalized wherever it appears and be accompanied by the generic terminology.

Although the use of trademarks is permissible in patent applications, the proprietary nature of the marks should be respected and every effort made to prevent their use in any manner which might adversely affect their validity as trademarks. The Examiner suggests that Applicants consider replacing VELCRO with "hook and loop fastening system".

10. Claim 20 is objected to because of the following informalities:

- Applicants use "said processor device" not "said electronic processing device" in line 3 of the claim, and "said processor" not "said electronic processing device" in line 5 of the claim.
- Applicants use "a wrapped configuration" not "the wrapped configuration" in line 5 of the claim.

11. Appropriate correction is required.

***Claim Rejections - 35 USC § 112***

12. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

13. Claim 6 recites the limitation "said positional information" in line 2 of the claim. There is insufficient antecedent basis for this limitation in the claim.

14. Claim 6 recites the limitation "said interface circuit" in lines 3-4 of the claim. There is insufficient antecedent basis for this limitation in the claim.

15. Claim 18 recites the limitation "said support" in lines 3-4 of the claim. There is insufficient antecedent basis for this limitation in the claim.

16. Claim 19 recites the limitation "said plastic cable" in line 3 of the claim. There is insufficient antecedent basis for this limitation in the claim.

***Claim Rejections - 35 USC § 102***

17. The following is a quotation of the appropriate paragraphs of 35 U.S.C. § 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

18. Claims 1, 2, 3, and 20 are rejected under 35 U.S.C. § 102(b) as being anticipated by Kuschel, German Gebrauchsmuster No. DE 295-12-808 U 1.

19. Regarding claim 1, Kuschel discloses a manually operable input apparatus for a portable electronic processing device (p. 1, ¶ 1), defining a plurality of regions each representing a respective data item (p. 2, ¶ 2; Fig. 4, element 6), said manually operable input apparatus comprising a plurality of sheets configured to produce a response to a mechanical interaction (p. 2, ¶ 2; Fig. 5, elements 4, 5, 8, 10), wherein said sheets are configured to be wrapped around said device to provide a protective cover (p. 2, ¶ 4; Figs. 1 & 2).

20. Regarding claim 2, Kuschel further discloses said input apparatus is a keyboard. Page 1, ¶ 4, Fig. 4, element 5.

21. Regarding claim 3, Kuschel further discloses said processing device is a hand-held computer, a mobile telephone or portable audio equipment. Fig. 1, element 1.

22. Regarding claim 20, Kuschel further discloses said apparatus is permanently attached to an edge of said processor device (p. 1, ¶ 5; Figs. 1-4) and configured to allow mutual arrangement in an operable configuration, in which the input apparatus extends from said edge of said processor (Fig. 4, elements 1 & 3), and reconfiguration into a wrapped configuration in which said input apparatus is wrapped around said processor device (Fig. 1).

***Claim Rejections - 35 USC § 103***

23. The following is a quotation of 35 U.S.C. § 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

24. Claims 4, 7, 10, 11, 15 and 16 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Kuschel as applied to claim 1 above, and further in view of Int'l Computers Ltd., UK Pat. Appl'n No. GB 2,279,617 A.

25. Regarding claim 4, Kuschel fails to disclose said apparatus is connected to said electronic processor device by a connection means. However, Int'l Computers Ltd. does disclose this feature. Page 2, ¶ 5; Fig. 1, elements 10, 11. It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Kuschel and Int'l Computers Ltd. because both patents relate to a portable computer with a foldable keyboard, and in order for the invention disclosed in Kuschel to function, the disclosed keyboard and portable computer would require some electrical connection. Int'l Computers Ltd. discloses one type of connection what is inherent in the design disclosed by Kuschel.

26. Regarding claim 7, Kuschel fails to disclose said connections means is configured so as to retain said electronic processing device connected thereto during the bending operations. However, Int'l Computers Ltd. does disclose this feature. Page 2, ¶ 7; Fig. 2.

27. Regarding claim 10, Kuschel fails to disclose that said second and third axis are disposed in a substantially parallel relationship to one another. However, Int'l Computers Ltd. does disclose this feature. Page 2, ¶ 7; Fig. 2, elements 21, 22.

28. Regarding claim 11, Kuschel fails to disclose said second and said third bending axis divide the detector into a central portion, a first lateral substantially planar portion and a second lateral substantially planar portion. However, Int'l Computers Ltd. does disclose this feature. Fig. 1, element 1.

29. Regarding claim 15, Kuschel fails to disclose in said intermediate position, said processor is operable independently of said input apparatus. However, Int'l Computers Ltd. does disclose this feature. Page 2, ¶ 7; Fig. 2, elements 21 & 22.

30. Regarding claim 16, Kuschel further discloses said device is supported on a self-erecting support mechanism in said operational configuration. Page 2, ¶ 6; Fig. 2, element 2.

31. It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the features of Int'l Computers Ltd. for the preceding reasons, *see supra* 35 U.S.C. § 103(a) rejection of claims 7, 10, 11, 15, and 16, and because the Int'l Computers Ltd. system provides details of the folding and connections, which Kuschel does not mention in connection with his foldable keyboard.

32. Claims 6 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Kuschel as applied to claim 1 above, and Int'l Computers Ltd., as applied to claim 4 above, and in further view of Rossmann, U.S. Pat. No. US 6,150,962 A1.

Kuschel fails to disclose said electronic processing device is programmed to correlate said positional information with look up tables for converting positional information received from said interface circuit into a presentation in the form of alpha numeric text. However, Rossmann does disclose this feature. Col. 4, lines 18-55. It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Kuschel



and Rossmann because both deal with input systems for portable input devices, and such processor programming would have been necessary in the normal use of the keyboard in order to allow the correct data to be input when a keyboard key was pressed.

33. Claim 5 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Kuschel as applied to claim 1 above, and Int'l Computers Ltd., as applied to claim 4 above, and in further view of Lien, U.S. Pat. Appl'n Pub. No. US 2002/0093436 A1.

Kuschel and Int'l Computers Ltd. fail to disclose said connection means further comprises an interface circuit configured to apply voltages to one or more of said sheets and to convey positional data to said electronic processing device. However, Lien does disclose this feature. ¶ 0023, Fig. 2, element 631 (erroneously called circuit board 63 in the text) It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Kuschel and Int'l Computers Ltd. and Lien because both Kuschel and Int'l Computers Ltd. disclose a keyboard, and Lien shows that the claimed connection means is conventional in the foldable keyboard art.

34. Claims 8, 9, 12 and 13 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Kuschel as applied to claim 1 above, and Int'l Computers Ltd., as applied to claim 4 above, and further in view of Michifumi, Jap. Pat. Appl'n Pub. No. 05031963 A.

35. Regarding claim 8, Int'l Computers Ltd. discloses said connection means connecting said apparatus to said processing device is foldable (p. 2, ¶ 7; Fig. 2) to allow said processing device and said apparatus to be mutually arranged in an operational configuration in which said processing device is supported in a position spaced apart from said input apparatus (p. 2, ¶ 5; Fig. 1). In addition, Int'l Computers Ltd. discloses bending said apparatus about a second and a

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third axis, non-parallel with said first axis. (p. 2, ¶ 7; Fig. 2, elements 21, 22). Kuschel and Int'l Computers Ltd. fail to disclose said connection means connecting said apparatus to said processing device is foldable to allow said processing device and said apparatus to be reconfigured to a wrapped configuration, in which said device is enveloped by said input apparatus, by the steps of folding said connecting means about a first axis to an intermediate position in which said processor device is received on a surface said apparatus.

However, Michifumi does disclose said connection means connecting said apparatus to said processing device is foldable to allow said processing device and said apparatus to be reconfigured to a wrapped configuration, in which said device is enveloped by said input apparatus, by the steps of folding said connecting means about a first axis (Fig. 1, element 34) to an intermediate position in which said processor device (Fig. 1, element 22) is received on a surface said apparatus (Fig. 1, element 50). Michifumi (translation), p.4, ¶ 5. It would have been obvious to one of ordinary skill in the art to combine the teachings of Kuschel and Int'l Computers Ltd. and Michifumi because all three disclosures concern an efficient way to wrap a keyboard securely around a processor for ease, and this structure allows for an efficient way to fold the keyboard when it is not in use.

36. Regarding claim 9, Kuschel further discloses said processor remains connected to said connection means during said folding operations. Page 1, ¶ 4; Figs. 1-4, element 1.

37. Regarding claim 12, Kuschel fails to disclose in the intermediate position, said electronic processor device is received by said central portion and said first lateral portion bends about a first edge of said electronic processor along said second axis and said second portion extends about a second edge of said electronic processor along said third axis to form said wrapped

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configuration. However, Michifumi does disclose in the intermediate position, said electronic processor device is received by said central portion (Fig. 1, element 50) and said first lateral portion (Fig. 1, element 52) bends about a first edge of said electronic processor along said second axis (Fig. 1, element 34) and said second portion (Fig. 1, element 54) extends about a second edge (Fig. 1, element 34) of said electronic processor along said third axis to form said wrapped configuration.

38. Regarding claim 13, Kuschel fails to disclose said first and second lateral portion of said apparatus are secured in the wrapped configuration by a securing means. However, Michifumi does disclose this feature. Fig. 1, element 38.

39. Claim 14 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Kuschel as applied to claim 1 above, Int'l Computers Ltd. as applied to claims 4, 8, and 11 above, Michifumi as applied to claims 8, 12, and 13 above, and further in view of Grant, U.S. Pat. No. US 5,854,624 A.

Kuschel, Int'l Computers Ltd. and Michifumi fail to disclose said securing means is a loop and hook arrangement such as Velcro. However, Grant does disclose this feature. Col. 4, lines 61-63. It would have been obvious to combine the teachings of Kuschel, Int'l Computers Ltd. and Michifumi and Grant because use of a loop and hook arrangement such as Velco is conventional.

40. Claims 17-19 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Kuschel as applied to claims 1 above, Int'l Computers Ltd. as applied to claims 4, 8, and 11 above, and further in view of Roehling, U.S. Pat. No. US 5403202 A.

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41. Regarding claim 17, Kuschel fails to disclose said mechanism comprises a flexible fabric cable having electrical connection elements contained therein and sections of a supporting plastic. However, Roehling does disclose this feature. Col. 1, lines 34-44; Fig. 1, element 1. It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the disclosure of Roehling with the teachings of Kuschel and Int'l Computers Ltd. because Roehling discloses exactly the structure required in the claimed invention, and this is a conventional way to connect movable elements to one another.

42. Regarding claim 18, Int'l Computers Ltd. further discloses said sections of supporting plastic are hinged to facilitate self-erection of said support. Fig. 2, element 23.

43. Regarding claim 19, Int'l Computers Ltd. further discloses said sections of plastic hinge about said plastic cable. Fig. 2, element 23.

44. Claim 21 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Kuschel as applied to claim 2 above, and in further view of Michifumi.

Kuschel fails to disclose said input apparatus is constructed from fabric. However, Michifumi does disclose this feature. See Abstract (translation) (stating that the device is made of "vinyl or synthetic leather"). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Kuschel and Michifumi because a "vinyl or synthetic leather" keyboard would further Kuschel's stated goal of provide a foldable pocket computer that has a large keyboard because a vinyl or synthetic leather keyboard would be lightweight and easy to fold.

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45. Claims 22-24 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Kuschel as applied to claim 1 above, and further in view of Lien, U.S. Pat. Appl'n Pub. No. US 2002/0093436 A1.

46. Regarding claim 22, Kuschel fails to disclose said input apparatus comprises a membrane keyboard. However, Lien does disclose this feature. ¶ 0001. It would have been obvious to one of obvious skill in the art at the time the invention was made to combine the teachings of Kuschel and Lien because Lien discloses a foldable keyboard, which is conventional in the art, and making the keyboard of Kuschel a "membrane keyboard" as in Lien will allow the keyboard to be more easily folded and transported.

47. Regarding claim 23, Kuschel fails to disclose said keyboard surface is configured so as to facilitate the bending of the keyboard. However, Lien does disclose this feature. Fig. 1.

48. Regarding claim 24, Kuschel discloses a manually operable input apparatus for a portable electronic processing device, defining a plurality of regions each representing a respective data item (p. 2, ¶ 2; Fig. 4, elements 3, 6), with sheets configured to be wrapped around said device to provide a protective cover (p. 1, ¶ 5; Fig. 1). Kuschel fails to disclose said manually operable input apparatus comprising a at least one fabric sheet and at least one membrane sheet, said sheets being configured so as to produce an output in response to a mechanical interaction. However, Lien does disclose a manually operable input apparatus comprising a at least one fabric sheet (¶ 0007) and at least one membrane sheet (¶ 0009), said sheets being configured so as to produce an output in response to a mechanical interaction (Figs. 4A, B).

***Conclusion***

49. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

Sandbach et al., US 6,585,162 B2 (describing a flexible data input device)

Daniel, US 6,575,647 B1 (describing a collapsible keyboard)

Tsai, US 6,538,642 B2 (describing a portable input apparatus)

Daniel, US 6,174,097 B1 (describing a collapsible keyboard)

Fullerton, US 6,108,200 A (describing a handheld computer keyboard system)

Weber et al., US 5,616,897 A (describing a flexible keyboard)

Crowley et al., US 5,459,461 A (describing an inflatable keyboard)

Chan, US 2002/0180621 A1 (describing a method of entering characters with a keypad and using previous characters to determine the order of character choice)

Wang, US 2002/0122028 A1 (describing an external keyboard for PDAs)

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Conrad J. DeWitte whose telephone number is (703) 305-8626. The examiner can normally be reached on Monday through Friday, 8 a.m. to 4:30 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bipin Shalwala can be reached on (703) 305-4938. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-3900.

CJD

  
JOSEPH MANCUSO  
PRIMARY EXAMINER